

REMARKS

Applicants file concurrently herewith a Request for Continued Examination and submit this response to the Final Office Action mailed on July 26, 2008 as part of the submission required under 37 CFR § 1.114. Claims 5-7 have been cancelled. New claims 57-61 have been added. After entry of the amendment, claims 1-4 and 8-61 are pending in the application. Applicants respectfully request reconsideration of the Application.

New claims 57-61 have been added. New claim 57 depends from claim 1 and recites that step (a) comprises containing a selected region of the carbon-carbon composite with the oxidation inhibiting composition. Support for this claim may be found in the originally filed specification at page 6, line 30 through page 7, line 3.

New claim 58 depends from claim 1 and recites that the oxidation inhibiting composition is resistant to moisture sensitivity thereby decreasing the treated carbon-carbon composite's sensitivity to reduction in friction. New claims 59-61 depend from claim 1 and recites that the oxidation inhibiting composition has a moisture sensitivity of below a certain % as indicated by the % moisture pick up of the composition in a humidity cabinet at 30°C or 40°C and 95% relative humidity. Support for claims 58-61 may be found in the originally filed specification at, for example, page 4, lines 3-6, page 24, line 11 through page 25, line 8, Tables 1-4, and Examples 37 and 38.

Rejections Under 35 U.S.C. § 102

Claims 1-4, 14-23, and 25-26 have been rejected under 35 U.S.C. §102(b) as being anticipated by Stover (U.S. Patent 5,759,622). Applicants respectfully traverse this rejection.

The '622 patent discloses a composition comprising (a) phosphoric acid, (b) (i) a metal phosphate or (ii) a combination of a zinc salt and an aluminum salt, and (c) a wetting agent. The '622 patent discloses manganese, zinc, and aluminum phosphates as suitable phosphates.

Independent claim 1 recites that the additional metal is chosen from an alkaline earth metal, boron, iron, tin, zinc or a mixture of two or more thereof, with the proviso that when the additional metal salt is a zinc phosphate it is zinc phosphate octahydrate. The '622 patent does not disclose a composition that includes one or more of these metals in

combination with aluminum. Thus, the '622 patent does not teach every feature of amended claim 1. Consequently, the '622 patent does not anticipate claim 1 claims 2-7, 14-23, and 25-26, which depend from claim 1. Applicants respectfully request that the rejections under 35 U.S.C. § 102(b) be withdrawn.

Rejections Under 35 U.S.C. § 103

Claims 2-3 and 26-27 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Stover. Applicants respectfully traverse this rejection.

As described above, the '622 patent does not teach or suggest the oxidation inhibiting composition recited in claim 1. Claims 2-3 and 26-27 depend from claim 1. Therefore, the '622 patent does not teach or suggest all the features of claims 2-3 or 26-27. Further, the '622 patent provides no teaching of adjusting the metal to phosphate ratio by adding a metal nitrate or metal salt as specified in claim 27. Applicants respectfully request that the rejection of claims 2-3 and 26-27 be withdrawn.

Claims 8-13 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Stover in view of Block (U.S. Patent 4,454,193). The Examiner contends Block teaches that zinc and magnesium are preferred multi-valent cations, which are especially resistant to oxidation at elevated temperatures, and that it would be obvious to modify Stover with magnesium salts. Applicants respectfully traverse this rejection.

While this rejection applies to claims 8-13, Applicants discuss the rejection also in terms of claim 1, which recites that the additional metal may comprise a salt of an alkaline earth metal, boron, iron, tin, zinc, or a mixture of two or more thereof, with the proviso that when the additional metal salt is a zinc phosphate it is zinc phosphate octahydrate.

Block is directed to a carbon/metal phosphate composite that is made by contacting a carbon body with a solution comprising a nonionic organophosphorous ester and a metal salt to coat the internal and external surfaces of the carbon body. Block describes the metal coating as a metal metaphosphate that is the reaction product of the nonionic organophosphorous ester and the metal salt. Block discloses that the metal salt may be any salt that forms a refractory metaphosphate and that the metal may be a multi-valent metal cation selected from groups IB, IIA, IIB, IIIB, VIA, and VIII of the periodic table.

In the Final Office Action, the Examiner contends that Applicants have attacked the

references individually and states that non-obviousness cannot be shown by attacking references individually where the rejections are based on combinations. Applicants respectfully disagree. Applicants have not attacked the references individually. Rather, Applicants' arguments address the teachings of the references and demonstrate that, when the references are considered as a whole, the selection and combination upon which the rejection is based is not consistent with the combination of references as a whole. Therefore, the combination of references does not render the claims obvious.

Further, Applicants have not merely argued that there is no suggestion to combine Block with Stover. Rather, Applicants have argued and demonstrated that, when the references are considered as a whole, a person skilled in the art would not have modified Stover with the teachings of Block to arrive at the claimed method.

Specifically, Block teaches that compositions formed from phosphoric acids or phosphate salts are undesirable and pose several problems for use as impregnants for carbon bodies. For example, Block teaches that impregnants formed from phosphoric acids or metal salts are difficult to synthesize consistently due to incomplete reaction between the metal salt and the phosphate, which results in large amounts of excess metal salt in the impregnant product. (Column 1, lines 37-41.) Block's solution to this problem is non-ionic and provides an organophosphorous ester that is free of acid groups or the corresponding salts thereof. (Column 4, lines 50-51.) This is to avoid the problems of high viscosity of the impregnating solution and the non-uniform composition of the resulting composite found in compositions that contain phosphoric acid or phosphates. (Column 4, lines 46-50.)

In view of the teachings of both Stover and Block, a person skilled in the art would not modify Stover with Block. Stover does not teach a composition with aluminum and at least one additional metal selected from alkaline earth metal, boron, iron, tin, or mixtures of two or more thereof. Despite Block's teaching that its compositions may use metals from several different groups in the periodic table (including magnesium), Block teaches away from compositions combining metal cations (or their salts) with phosphorous acid and/or metal phosphates.

Additionally, Block would not lead a person skilled in the art to combine the recited additional metals with aluminum. Block teaches that aluminum salts are not very effective

and are not preferred. (Column 7, lines 43-45.) Thus, Block teaches away from aluminum salts. Consequently, a person skilled in the art would not combine an aluminum salt with the other salts disclosed in Block.

Therefore, when considering the combination of the references as a whole, a person skilled in the art would not simply choose from the metals disclosed by Block and use those in Stover's composition, which includes phosphorous acid and/or metal phosphates. Block would teach away from or, at the least, not provide a person skilled in the art with a reasonable expectation of success of modifying Stover with Block. Rather, it is only through hindsight that a person skilled in the art would modify Stover with Block to arrive at the claimed methods. Consequently, the claims are not obvious in view of the combination of Stover and Block. Applicants request that the rejections under 35 U.S.C. § 103(a) based on Stover in view of Block be withdrawn.

The Examiner rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over Stover in view of U.S. Patent No. 4,425,407 to Galasso et al. The Examiner contends that Galasso et al. teaches contacting a carbon-carbon composite material with molten silicon and modifying Stover with Galasso would have been obvious because Galasso teaches that such a method is well known in the art. Applicants respectfully traverse this rejection.

As described above, Stover does not teach or suggest all the features of claim 1. Claim 24 depends from claim 1. Galasso does not make up for material that is not found in Stover. Therefore, claim 24 is not obvious in view of Stover in combination with Galasso. Further, for the reasons described above with respect to the combination of Stover and Block, claim 24 is not obvious even if Stover and Block were modified by Galasso. Applicants respectfully request that the rejection be withdrawn.

Applicants submit that new claims 57-61 are patentable over the cited references. The cited references do not teach or suggest applying the oxidation inhibiting composition to a selected area of the carbon-carbon composite (claim 57) or that the oxidation inhibiting composition is resistant to moisture and reduces the treated carbon-carbon composite's sensitivity to reduction in friction (claims 58-61).

CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully submit that the application is in condition for allowance. A notice of allowance is respectfully requested.

In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to our Deposit Account No. 18-0988 under Attorney Docket No. **GRCBP0317USA**.

Respectfully submitted,

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